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depositing a fluorine-containing organic film on a semiconductor substrate using a material gas containing fluorocarbon as a main component in a reactor chamber of a plasma processing apparatus; and

densifying the fluorine-containing organic film by exposing the fluorine-containing organic film to plasma of a rare gas in the same reactor chamber,
wherein the fluorocarbon is C_5F_8 , C_3F_6 or C_4F_6 .

6. (Amended) A method for fabricating a semiconductor device, comprising the steps of:

forming a mask pattern made of a resist film or an insulating film on a metal film deposited on a semiconductor substrate;

dry-etching the metal film using the mask pattern to form a plurality of metal interconnections made of the metal film;

depositing an interlayer insulating film made of a fluorine-containing organic film between the plurality of metal interconnections and on top surfaces of the metal interconnections using a material gas containing fluorocarbon as a main component in a reactor chamber of a plasma processing apparatus; and

densifying the fluorine-containing organic film by exposing the fluorine-containing organic film to plasma of a rare gas in the same reactor chamber,
wherein the fluorocarbon is C_5F_8 , C_3F_6 or C_4F_6 .

REMARKS

At the outset, the Examiner is thanked for the review and consideration of the present application.

The Examiner's Office Action dated December 17, 2001 has been received and its contents reviewed. By this Amendment claims 4 and 8 have been canceled, and claims 1 and 6 have been amended. Accordingly, claims 1-3, 5-7, and 9 are pending in the present application, of which claims 1 and 6 are independent.

Referring now to the Office Action, claims 1-9 are rejected under 35 U.S.C. § 103(a) as unpatentable over Akahori et al. (U.S. Patent No. 6,218,299 - hereafter Akahori) in view of